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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,168	11/07/2001	Yeshik Shin	594728102US	6812
25096	7590	10/18/2005	EXAMINER	
PERKINS COIE LLP			NGUYEN, STEVEN H D	
PATENT-SEA			ART UNIT	
P.O. BOX 1247			PAPER NUMBER	
SEATTLE, WA 98111-1247			2665	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/037,168	Applicant(s) SHIN ET AL.	
	Examiner Steven HD Nguyen	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. This application repeats a substantial portion of prior Application No. 60/252724, filed 11/22/00, and adds and claims additional disclosure not presented in the prior application. Since this application names an inventor or inventors named in the prior application, it may constitute a continuation-in-part of the prior application. Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78.

Specification

2. The applicant should inserted the application serial number into the blank space of paragraph 1 of pages 1-2.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Richmond (US 20020041650, Provisional Application 60/217520).

Regarding claim 1, Richmond discloses a method in a receiving device for compensating for differences in clock frequencies between a transmitting device and the receiving device (Fig

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1) the method comprising receiving a stream of symbols transmitted serially from the transmitting device (Fig 3, ref 28); identifying variable length groups of bits from the received stream along with an indication of whether the number of bits in the group represents an overrun or an under-run of bits (Fig 3, Ref 80); tracking whether an overrun or under-run criterion is satisfied based on the identified variable length groups of bits (Fig 3, ref 52 by comparing the difference between the receiving and transmitting address in order to detect over-run or under-run); and upon detection of an out-of-band symbol, removing the out-of-band symbol from the stream of symbols when the overrun criterion is satisfied; and inserting an additional out-of-band symbol into the stream when the under-run criterion is satisfied (Fig 3, Ref 52 and Fig 5 for deleting the primitive based, See page 1, Sec 9 and Provisional application Pages 1-2).

Regarding claim 2, Richmond discloses the tracking includes transferring the identified group of bits to a first-in-first-out bit buffer and maintaining a start-of-symbol pointer to indicate a starting bit of a symbol within the bit buffer (Fig 3, Ref 80 and Figs 6c and 7).

Regarding claim 3, Richmond discloses the tracking includes upon detecting a synchronization symbol setting the start-of-symbol pointer to point to the start of the synchronization symbol (Fig 3, Ref 52 and Fig 5).

Regarding claim 4, Richmond discloses the tracking includes moving the start-of-symbol pointer to an earlier received bit when an overrun of bits is indicated and moving the start-of-symbol pointer to later received bit when an under-run of bits is indicated (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 5, Richmond discloses the under-run criterion is satisfied when the start-of-symbol pointer is moved past a certain bit position within the bit buffer (Fig 3, Ref 52 and Fig 5 for inserting or deleting).

Regarding claim 6, Richmond discloses the overrun criterion is satisfied when the start-of-symbol pointer is moved before a certain bit position with the bit buffer (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 7, Richmond discloses the removing of an out-of-band symbol includes moving the start-of-symbol pointer to after the detected out-of-band symbol (Fig 2 for inserting or deleting primitives and Figs 6c and 7).

Regarding claim 8, Richmond discloses the inserting of an out-of-band symbol includes moving the start-of-symbol pointer a number of bit positions before the current start-of-symbol pointer and adding an out-of-band symbol at the start-of-symbol pointer, the number of bit positions moved being equal to the number of bits in a symbol (Fig 3, Ref 52 and Fig 5 for inserting or deleting the primitives as Fig 2 and Figs 6c and 7).

Regarding claim 9, Richmond discloses including extracting a symbol starting at the bit pointed to by the start-of-symbol pointer (Fig 3, ref 52 for outputting a read address for reading the data from the buffer output link and Figs 6c and 7).

Regarding claim 10, Richmond discloses the detected out-of-band symbol is part of a primitive (Fig 3, ref 80).

Regarding claim 11, Richmond discloses the inserting inserts of copy of the detected out-of-band symbol (Fig 3, ref 52 for inserting primitives).

Regarding claim 12, Richmond discloses the primitive includes two out-of-band symbols (Fig 2, two primitives, aligning).

Regarding claim 13, Richmond discloses the inserting includes inserting a copy of the first of the two out-of-band symbols

Regarding claim 14, Richmond discloses the removing includes removing the first of the two out-of-band symbols (Fig 3, Ref 52).

Regarding claim 15, Richmond discloses wherein the primitive is a control primitive (Fig 3, Ref 80).

Regarding claim 16, Richmond discloses the primitive is a synchronization primitive (Fig 3, Ref 80).

Regarding claim 17, Richmond discloses a method in a receiving device for maintaining synchronization between the receiving device with a transmitting device (Fig 2) comprising receiving variable length groups of bits from a received stream of bits of symbols along with an indication of whether the number of bits in the group represents an overrun or an under-run of bits (Fig 3, Ref 28 for receiving a bit stream and Ref 52 for receiving an indicator of overrun or underrun); tracking whether an overrun or under-run criterion is satisfied based on the received variable length groups of bits (Ref 52 for tracking if overrun or under-run is OK or not and Fig 5); and upon receiving a symbol of a certain type, adjusting synchronization based on whether the overrun or under-run condition is satisfied (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 18, Richmond discloses the certain type of symbol is an out-of-band symbol (Fig 3, Ref 80).

Regarding claim 19, Richmond discloses the adjusting of the synchronization includes removing the received symbol of the certain type from the stream when the overrun criterion is satisfied and inserting an additional symbol of the certain type into the stream when the under-run criterion is satisfied (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 20, Richmond discloses the tracking includes transferring the received group of bits to a first-in-first-out bit buffer and maintaining a start-of-symbol pointer to indicate a starting bit of a symbol within the bit buffer (Fig 3 and Figs 6c and 7).

Regarding claim 21, Richmond discloses the tracking includes upon detecting a synchronization symbol setting the start-of-symbol pointer to point to the start of the synchronization symbol (Fig 3, Ref 52 and Figs 5, 6c and 7).

Regarding claim 22, Richmond discloses the tracking includes moving the start-of-symbol pointer to an earlier received bit when an overrun of bits is indicated and moving the start-of-symbol pointer to later received bit when an under-run of bits is indicated (Fig 3, Ref 52 and Fig 5 for inserting or deleting).

Regarding claim 23, Richmond discloses the under-run criterion is satisfied when the start-of-symbol pointer is moved past a certain bit position within the bit buffer (Fig 3, Ref 52 and Fig 5 for inserting or deleting)..

Regarding claim 24, Richmond discloses the overrun criterion is satisfied when the start-of-symbol pointer is moved before a certain bit position with the bit buffer (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 25, Richmond discloses the adjusting includes removing of the symbol of the certain type by moving the start-of-symbol pointer to after the out-of-band symbol when an overrun condition is satisfied (Fig 3, Ref 52 and Fig 5 for inserting or deleting)..

Regarding claim 26, Richmond discloses the adjusting includes inserting of a symbol by moving the start-of-symbol pointer a number of bit positions before the current start-of-symbol pointer and adding a symbol of the certain type at the start-of-symbol pointer, the number of bit positions moved being equal to the number of bits in a symbol, when an under-run condition is satisfied (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 27, Richmond discloses an aligner in a receiving device that maintains symbol alignment between the receiving device with a transmitting device (Fig 2) comprising a detecting component that detects whether the clock frequency of the transmitting device is faster or slower than the clock frequency of the receiving device based on variable length groups of bits received from the transmitting device as part of a stream of bits of symbols (Fig 3, ref 52 and Page 1, Sec [0009]); and an adjusting component that adjusts alignment based on whether the clock frequency of the transmitting device is faster or slower than the clock frequency of the receiving device (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 28, Richmond discloses the number of bits in the variable length groups of bits indicates whether the clock frequency of the transmitting device is faster or slower than the clock frequency of the receiving device (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 29, Richmond discloses the adjusting component removes a received symbol of a certain type from the stream when the clock frequency of the transmitting device is

faster than the clock frequency of the receiving device and inserts an additional symbol of a certain type into the stream when the clock frequency of the transmitting device is slower than the clock frequency of the receiving device (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 30, Richmond discloses a bit buffer (Fig 2, Ref 24) containing recently received variable length groups of bits and wherein the adjusting component (Fig 3, Ref 52) moves forward a start-of-symbol pointer into the bit buffer one bit position when the number of bits in the variable length group of bits indicates that the clock frequency of the transmitting device is slower than the clock frequency of the receiving device and moves backwards the start-of-symbol pointer into the bit buffer one bit position when the number of bits in the variable length group of bits indicates that the clock frequency of the transmitting device is faster than the clock frequency of the receiving device (Fig 5 and Page 1, Sec [0009] and Pages 1-2 of Provisional application).

Regarding claim 31, Richmond discloses the adjusting component moves backward the start-of-symbol pointer one symbol position when the start-of-symbol pointer has moved forward past a certain bit position and moves forward one symbol position the start-of-symbol pointer when the start-of-symbol pointer has moved backward past a certain bit position (Fig 3, Ref 52 and Fig 5 for inserting or deleting).

Regarding claim 32, Richmond discloses the moving backward and moving forward of the start-of-symbol pointer one symbol position occurs upon receiving a symbol of a certain type (Fig 3, Ref 52 and Fig 5 for inserting or deleting).

Regarding claim 33, Richmond discloses the symbol of the certain type is an out-of-band symbol (Fig 3, Ref 80).

Regarding claim 34, Richmond discloses the symbol of the certain type is a symbol of a primitive (Fig 3, Ref 80).

Regarding claim 35, Richmond discloses the moving backward of the start-of-symbol pointer one symbol position includes inserting a symbol into the stream of symbols and the moving forward of the start-of-symbol pointer one symbol position removing a symbol from the stream of symbols (Fig 3, Ref 52 and Fig 5 for inserting or deleting and Figs 6c and 7).

Regarding claim 36, Richmond discloses a synchronization component that detects a synchronization symbol in the stream of symbols and sets a start-of-symbol pointer to point to the start of the synchronization symbol (Fig 3, ref 80 and Fig 2 for detecting sync primitive and Figs 6c and 7).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iannarone (USP 4945548) discloses a method and system for detecting overflow and underrun of buffer for inserting and remove idle characters.

Susnow (USP 6594329) discloses a method and system for detecting overflow and underrun of buffer for inserting and remove idle characters.

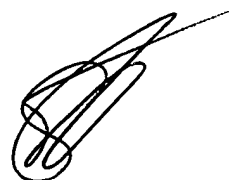
Broock (USP 6891845) discloses a method and system for for detecting overflow and underrun of buffer for inserting and remove idle characters.

Lee (USP 6594325) discloses a method and system for for detecting overflow and underrun of buffer for inserting and remove idle characters.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (571) 272-3159. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D. Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven HD Nguyen
Primary Examiner
Art Unit 2665
10/15/05